

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TENNESSEE
EASTERN DIVISION

LISA C. CONE, attorney in fact and next friend of
TIMOTHY H.L. FRAZIER, and TIMOTHY H.L.
FRAZIER, individually,

Plaintiffs,

v.

No. 14-1122

HANKOOK TIRE COMPANY, LTD.,

Defendants.

ORDER GRANTING IN PART AND DENYING IN PART
DEFENDANT'S MOTIONS IN LIMINE (D.E. 204 & 205) &
DENYING DEFENDANT'S MOTION FOR LEAVE TO FILE REPLY (D.E. 267)

Before the Court are two motions in limine filed by Defendant, Hankook Tire Company, Limited ("Hankook"). (Docket Entry ("D.E.") 204 & 205.)¹ In their complaint, Plaintiffs, Lisa C. Cone and Timothy H.L. Frazier, aver that Frazier was driving a concrete mixer truck when a tire manufactured by Hankook suffered a tread separation. (D.E. 1.) The truck overturned, and Frazier suffered serious injuries as a result. (*Id.*) Cone and Frazier have offered two experts in tire failure analysis to support their claims that the tire's tread separation resulted from manufacturing defects, the testimony of which Hankook now seeks to exclude.

¹ Defendant filed the instant motions on June 22, 2016, (D.E. 204 & 205), and Plaintiffs filed responses on July 6, 2016 (D.E. 219 & 221). On January 13, 2017, Hankook filed a motion requesting leave to file a consolidated reply to Cone and Frazier's responses. (D.E. 267.) Defendant did not explain its gross delay in seeking to file a reply, and the Court sees no reason to grant the untimely request. Accordingly, that motion is DENIED.

I. LEGAL STANDARD

The proponent of expert testimony has the burden of showing that the evidence is admissible. Fed. R. Evid. 104(a); *E.E.O.C. v. Tepro, Inc.*, 133 F. Supp. 3d 1034, 1040 (E.D. Tenn. Sept. 28, 2015), *recons. denied* 2015 WL 12658237 (E.D. Tenn. Oct. 21, 2015). Such evidence is governed by Rule 702 of the Federal Rules of Evidence, which provides that

[a] witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if [] (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

In addition, the court has the authority under Fed. R. Evid. 403 to “exclude relevant evidence if its probative value is substantially outweighed by a danger of . . . unfair prejudice, confusing the issues[or] misleading the jury[.]”

The court's determination whether expert testimony is admissible under the rule proceeds in three steps: (1) “the witness must be qualified,” (2) “the testimony must be relevant,” and (3) “the testimony must be reliable.” *United States v. Rios*, 830 F.3d 403, 413 (6th Cir. 2016), *reh'g en banc denied* (Sept. 27, 2016).

The district court is granted “considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable, provided that the gatekeeping mandate of *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579, [596] (1993), is followed to ensure the reliability and relevancy of expert testimony.” *Rios*, 830 F.3d at 413 (internal quotation marks omitted). The reliability inquiry focuses on the principles and

methodology that underlie the evidence more than the conclusions it generates. *Vaughn v. Konecranes, Inc.*, 642 F. App'x 568, 577 (6th Cir. 2016).

In *Daubert*, the Court identified a nonexhaustive list of factors to assist courts in assessing the reliability of an expert opinion, including (1) “whether a theory or technique can be (and has been) tested,” (2) “whether the theory has been subjected to peer review and publication,” (3) whether the technique has “a high known or potential rate of error,” and (4) “whether the theory or technique enjoys ‘general acceptance’ within a ‘relevant scientific community.’” *Johnson v. Manitowoc Boom Trucks, Inc.*, 484 F.3d 426, 429 (6th Cir. 2007) (citing *Daubert*, 509 U.S. at 592-94) (alterations & some internal quotation marks omitted). Whether the court applies these factors depends “on the nature of the issue, the expert’s particular expertise, and the subject of his testimony.” *Kumho Tire Co., Ltd. v. Carmichael*, 526 U.S. 137, 150 (1999). As the Sixth Circuit has recognized, “the fact that [an expert’s] opinions may not have been subjected to the crucible of peer review, or that their validity has not been confirmed through empirical analysis, does not render them unreliable and inadmissible.” *First Tenn. Bank Nat. Ass’n v. Barreto*, 268 F.3d 319, 334 (6th Cir. 2001). “‘The distinction between scientific and non-scientific expert testimony is a critical one[,]’ and . . . *Daubert* is ‘only of limited help’ in assessing technical or experiential expertise.” *Id.* (quoting *Berry v. City of Detroit*, 25 F.3d 1342, 1349 (6th Cir. 1994)).

Rejection of expert testimony is the exception, not the rule. *United States ex rel. Tenn. Valley Auth. v. 1.72 Acres of Land in Tenn.*, 821 F.3d 742, 749 (6th Cir. 2016). Any weakness in the underlying factual basis goes to the weight of the evidence, not its admissibility. *Daubert*, 509 U.S. at 596. “Accordingly, Rule 702 should be broadly interpreted on the basis of whether

the use of expert testimony will assist the trier of fact.” *1.72 Acres of Land in Tenn.*, 821 F.3d at 749 (internal quotation marks omitted).

II. OPINIONS AND ANALYSIS

1. Opinion of David Southwell

First, Defendant requests exclusion of David Southwell’s opinion that the subject tire had manufacturing defects. (D.E. 204.) Southwell has a master’s degree in engineering, a certificate in automotive mechanics, and extensive experience working for tire manufacturers in various capacities, including inspecting tires, investigating tire failures, and recording and analyzing data about tire failures and warranties. His work in tire failure analysis at Bridgestone involved collecting failed tires and conducting testing to identify “how [each] tire was manufactured and what had gone wrong in the manufacture of that tire to cause the separation.” (D.E. 221-4 at PageID 7089.) The expert also completed training at “Firestone University,” which included instruction in tire design, compounding, construction, and field engineering.

Southwell examined the subject tire along with the accident report, photographs from the scene and of the tire, x-rays of the tire, and shearographic images of the “companion tire.”² He identified several causes for the tread separation, which he attributed to manufacturing defects, including distorted belt cords, insufficient gauge of the belt skim coat, “reduced tack and component adhesion” caused by the use of “excessively aged components,” and “substantial belt misalignments.”

Hankook first attacks Southwell’s qualifications, noting that he works part-time as a tire failure analyst, “has no publications or patents,” and is not an expert in accident reconstruction or

² The “companion tire” was on the right, front wheel at the time of the accident. The tire that suffered the tread separation was in the left, front position.

rubber chemistry. (D.E. 204-1 at PageID 3681.) Defendant did not explain what relevance these purported limitations have to the expert's opinion in this case, and Hankook does not question Southwell's background as an engineer and vocational experience in the tire industry. Thus, these facts do not disqualify him from testifying. *See Benton v. Ford Motor Co.*, 492 F. Supp. 2d 874, 877 (S.D. Ohio 2007) (noting that "where the opposing side has the opportunity to cross-examine an expert regarding his qualifications and where the jury is properly instructed to determine for itself the weight and credibility to be given to the expert's testimony, an argument opposing admissibility of the testimony on the grounds that it is outside the witness's area of expertise must fail") (citing *Morales v. Am. Honda Motor Co., Inc.*, 151 F.3d 500, 515 (6th Cir. 1998)). Also, Defendant has alleged that an Australian court rejected the expert's opinion in a 2010 case. However, this Court is unaware of the standard applied in that case or even whether that court rejected admission of the expert's opinions completely or instead disagreed with his ultimate conclusions. Thus, it has no bearing on the admissibility of his proffered opinions in this case. The Court finds that Southwell is qualified to testify as an expert in tire failure analysis. Next, Defendant lodges objections to the reliability of each defect opinion offered by the expert, which the Court will address in turn.

a. Belt cord straightness

According to Southwell, there were defects in the placement of the steel cords within the skim coat. He opined that steel cords should "be arranged straight and parallel." (D.E. 221-1 at PageID 6730.) Based on his review of photographs of the tire, the expert identified distortion of the "[fourth] belt ply cords," which he said would result in increased stress on certain areas of the tire, "increasing the overall component fatigue load and potentially contributing to premature

structural failure of the tire.” (*Id.* at PageID 6731.) He explained that the distorted cords caused unequal stress concentrations in particular areas of the tire, increasing the potential for tread separation. The expert averred that he conducted testing while working for Bridgestone, which demonstrated that this defect could lead to tread separation. In the course of this testing, tires were subjected to “durability testing on a test wheel” and after the tires failed, they were evaluated and a “wavy belt” was determined to be the cause of failure. (D.E. 221-4 at PageID 7062.) Southwell said that he led the team that conducted this testing and that both he and other team members agreed on the cause of failure. The expert admitted that, in the present case, there was “a small area of separation” where the wavy belt was located and that it was not responsible for “the catastrophic failure of the tire.” (*Id.*)

Hankook challenges admission of this opinion on the basis that the expert admitted this defect did not initiate the tread separation. Although true, Southwell distinguished the *initial* site of tread separation from other weaknesses in the tire which exacerbated the situation and led to the tire’s catastrophic failure. Further, the expert testified that, while working at Bridgestone, he conducted testing that supported his theory that a wavy belt could lead to tire failure. Hankook takes issue with the fact that there is no publicly available testing that supports his theory. But, as the United States Supreme Court recognized in *Kumho*,

Engineering testimony rests upon scientific foundations, the reliability of which will be at issue in some cases. In other cases, the relevant reliability concerns may focus upon personal knowledge or experience. . . . [T]here are many different kinds of experts, and many different kinds of expertise.

526 U.S. at 150. An expert can “draw a conclusion from a set of observations based on extensive and specialized experience,” and “tire abuse may often be identified by qualified experts through visual or tactile inspection of the tire.” *Kumho*, 526 U.S. at 156. Southwell

based his opinion on his observation of the tire along with his experience in the tire industry, including time spent studying the cause of tire failures. The expert's methodology appears to be similar to that employed by other experts in the field. *See Whitten v. Michelin Am. Research & Dev. Corp.*, No. 05-2761-JPM/TMP, 2008 WL 2943391, at *4 (W.D. Tenn. July 25, 2008) (accepting expert's tire failure analysis opinion based on general industry experience and inspection of subject tire); *Cunningham v. Michelin N. Am., Inc.*, No. 04-1144-T/An., 2006 WL 5499281, at *4 (W.D. Tenn. Aug. 17, 2006) (finding tire expert's method of visual inspection coupled with industry experience was reliable). Accordingly, this opinion is admissible and Hankook's motion is DENIED on this ground.

b. Skim coat gauge

Southwell also attributed the tire's failure in part to an inadequate skim coat gauge. The expert explained that the skim coat is the rubber layer into which steel cords are embedded. As it rolls, components within a tire move and cause stress and strain, which is deflected within the rubber skim coat. Thus, ensuring that the coat has the correct gauge is important—if the gauge is too thin, there is insufficient material to disburse the energy, but if the gauge is too thick, more heat is generated and contained in the tire, affecting its durability. Southwell opined that the skim coat gauge in the subject tire was insufficient. However, he admitted in his report that the nature of the tire's failure “preclude[d] the possibility of measuring with anywhere near the required degree of accuracy the gauge of belt skim coat in the failed tire” or identifying “the degree of skim coat gauge variation that may have existed in the tire from the time it was manufactured.” (D.E. 221-1 at PageID 6714.) Nevertheless, he opined that there were “signs that the belt skim coat may have been of insufficient gauge.” (*Id.*) Southwell based this

conclusion on observations that there were exposed cords adjacent to areas of covered cords, changes in “fracture surface texture,” and isolated patches of exposed cords. (*Id.*) But, he concluded that “it [was] difficult on this basis alone to be totally confident that skim coat inadequacy was in fact evident in the tire prior to its failure.” (*Id.* at PageID 6715.)

When questioned about this particular opinion in his deposition, Southwell testified that he could not quantify what the skim coat gauge should have been or what it actually was. He agreed that, of the several defect theories offered, he was least confident in his opinion about the skim coat gauge. The expert estimated there was “at least a [fifty] percent probability that” the defect existed in the tire. (D.E. 221-4 at PageID 7060.)

Hankook argues that this opinion should be excluded because it is not supported by sufficient evidence. The Court agrees with Defendant. An expert’s opinion must “rest[] upon a reliable foundation, as opposed to . . . unsupported speculation.” *Visteon Global Techs., Inc. v. Garmin Int’l, Inc.*, Case No. 10-cv-10578, 2016 WL 5956325, at *14 (E.D. Mich. Oct. 14, 2016) (quoting *In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 529-30 (6th Cir. 2008)). In both his report and deposition, Southwell stated that it was not possible to measure the gauge of the skim coat on the subject tire or even to say what it should have been. Although he identified several “signs” that supported this defect theory, he noted that it was “difficult on this basis alone to be totally confident” that the skim coat gauge was inadequate. (D.E. 221-1 at PageID 6715.) Despite this, he ultimately opined that the gauge was insufficient.

Plaintiffs aver that Southwell’s opinion “is based on his experience and observations of thousands of tires over the past [twenty-five] years in the tire industry.” (D.E. 221 at PageID 6695.) Cone and Frazier contend that this defect is one of many, which “tends to show that there

were serious errors made in the overall construction of the tire . . .” and “bolsters his conclusions in this case.” (*Id.* at PageID 6696.) The Court does not doubt that Southwell has extensive knowledge of tires, but his opinion about the skim coat gauge in this case is simply too speculative. The expert candidly, and repeatedly, stated that he could not measure the skim coat gauge in the subject tire and that he was not “totally confident” that this defect existed prior to the tire’s failure. (D.E. 221-1 at PageID 6715.) Although he identified “signs” that he said supported his theory, he acknowledged it was “difficult” to opine on the gauge of the skim coat based only on those signs. (D.E. 221-1 at PageID 6714.) Accordingly, the motion to exclude Southwell’s opinion in this respect is GRANTED.

c. Component adhesion

Southwell also offered an opinion that the tire was manufactured with “excessively aged components,” which led to “reduced tack and component adhesion.” (D.E. 221-1 at PageID 6735.) He based this conclusion on the appearance of liner pattern marks on the tire’s skim coat. Southwell explained that a liner is placed between rolls of uncured rubber to keep the components from adhering. The liner is removed before the tire undergoes the vulcanization process. During this process, heat and pressure are applied, causing the rubber to soften, and “any residual liner impression is normally obliterated as the adjacent components are chemically bonded.” (*Id.* at PageID 6722.) According to the expert, liner pattern marks that appear in a fully vulcanized tire indicate that the components were subjected to improper “storage duration and conditions.” (*Id.* at PageID 6723.) This alleged defect ultimately resulted in “substandard adhesion between the [tire’s] belts,” which, the expert opined, contributed to the tread belt separation. (D.E. 221-4 at PageID 7073.)

Southwell testified in his deposition that he conducted testing on the correlation between liner pattern marks and tire failure while he worked at Bridgestone. He explained that a “peel test” was used to measure the force required to peel the components in a tire apart, which allowed him to “evaluate[] the adhesion between the components” (*Id.* at PageID 7073,7074.) The “peel strength” of tires with liner pattern marks was then compared to those without marks, and the expert determined that the peel strength of the tires with liner marks was reduced by seventy percent. (*Id.* at PageID 7074.)

Defendant seeks to exclude this opinion on the basis that it is “at odds with peer-reviewed literature” and is unsupported “by reliable testing or objective data.” (D.E. 204-1 at PageID 3690.) Plaintiffs respond that the expert relied on his engineering background and extensive knowledge of the tire manufacturing process. They note that Southwell personally conducted testing related to this defect while employed by Bridgestone and that his report cited “numerous” authorities on the importance of proper bonding. (D.E. 221 at PageID 6688.)

Again, the Court concludes that Plaintiffs have met their burden of showing this evidence is admissible. Southwell has provided a detailed explanation of the process that leads to liner pattern marks and tied that to his theory that this was a defect that led to the tread separation by identifying areas of the subject tire where marks are apparent. While employed by a tire manufacturer, he conducted testing that he says supports his theory. Defendant may be able to point to sources that disagree with the expert’s conclusions, and Hankook will have an opportunity to cross-examine him in that regard, but the opinion is admissible. Therefore, the motion is DENIED in this respect.

d. Belt misalignment

In his report, Southwell stated that “[a]chieving accurate placement of each of the steel belts when building a tire is essential to its durability when placed into service.” (D.E. 221-1 at PageID 6726.) He reviewed x-ray images of the tire, which “reveal[ed] significant visible variation in belt alignment.” (*Id.* at PageID 6727.) In his experience, the variation was “outside reasonable manufacturing quality assurance limits and would most certainly have contributed to non-uniform stress distributions” in the tire. (*Id.*) Southwell opined that this “substantial stress concentration” led to “accelerated fatigue” of the tire’s components and “ultimately contributed to its catastrophic failure.” (*Id.* at PageID 6729.) According to the expert, the failure “commenced between the second and third belts but was initiated by the . . . misplacement of the first belt on the body ply.” (D.E. 221-4 at PageID 7057.)

Defendant objects to the expert’s testimony regarding belt misalignment, arguing that Plaintiffs’ other tire failure expert, Troy Cottles, did not observe a belt defect in the same area as Southwell. Thus, says Hankook, “it is possible that Mr. Southwell misinterpreted this x-ray and that his opinion regarding the main cause of the accident, therefore, is incorrect.” (D.E. 204-1 at PageID 3693.) However, this is not a proper ground for challenging an expert’s opinion. Whether Southwell’s opinion is correct is a matter to be resolved by the jury. The fact that Cone and Frazier’s experts disagree on this point goes to the weight, not the admissibility, of their respective opinions.

Defendant also takes issue with the methodology employed by Southwell. Hankook contends that x-rays have “limitations as analytical tools,” a fact it says the expert

acknowledged,³ and suggests that this explains the difference of opinion between Cottles and Southwell. (D.E. 204-1 at PageID 3693.) Southwell based his opinion regarding the misalignment of the belt on “an understanding of the stresses that are introduced into a rolling tire and how they[are] distributed through the crown of the tire.” (D.E. 221-4 at PageID 7058.) In his report, the expert provided a detailed explanation of the role of belt placement in the tire’s long-term durability accompanied by graphics, x-rays, and photographs of the subject tire. (See D.E. 221-1 at PageID 6725-29.) As noted above, experience can serve as an adequate basis for an expert opinion. After careful review, the Court concludes that Cone and Frazier have shown that Southwell’s opinion is reliable in this regard and will aid the jury in its understanding of this particular issue. Accordingly, Hankook’s motion in limine is DENIED on this ground.

e. Alternative causes of tire’s failure

Finally, Defendant requests exclusion on the basis that Southwell did not rule out alternative causes for the tire’s failure. A failure to consider alternative causes may be grounds for declining to certify an expert. *Newell Rubbermaid, Inc. v. Raymond Corp.*, 676 F.3d 521, 527 (6th Cir. 2012). However, the expert’s report reflects that he considered “cut/chip damage and ‘stone drilling’ that [was] evident on both” the subject tire and its companion. (D.E. 221-1 at PageID 6734.) He acknowledged that manufacturing defects are not the sole cause of all tire failures, but he ruled other causes out in this present case, finding that “no service condition anomalies [could] account for the very clear evidence borne by the subject tire that indicate[d]

³ The Court reviewed the portion of the transcript cited by Hankook on this point, (see D.E. 204-5 at PageID 3829), but did not find any discussion of x-ray methodology or its limitations.

very clearly a range of defects in its manufacture” (*Id.*) Accordingly, Southwell appropriately considered other causes of the tire’s failure. This argument is without merit.

2. Opinion of Troy Cottles

Hankook also seeks exclusion of Troy Cottles’s expert opinion regarding the cause of the subject tire’s failure. (D.E. 205.) Cottles obtained a degree in mathematics with a minor in physics. After working in the tire and rubber industry for seventeen years, he was promoted to technical director of tire development for Goodyear-Dunlop Tires. He has been employed as a forensic tire failure analyst and tire design and manufacturing consultant since 2005. Cottles has previously been admitted as an expert in tire failure analysis in a number of cases. *See, e.g., Vega v. Ford Motor Co.*, No. EP-11-CA-450-FM, 2013 WL 6147558, at *1-2 (W.D. Tex. Mar. 27, 2013); *Stallings v. Michelin Am. Research & Dev. Corp.*, No. 1:07-CV-2497-RWS, 2010 WL 966865, at *2-4 (N.D. Ga. Mar. 12, 2010); *Whitten*, 2008 WL 2943391, at *2-4.

In the present case, Cottles has offered his opinion that the following three manufacturing defects led to a tread separation in the subject tire: inadequate bonding, oxidative degradation of the belt skims, and belt defects. In rendering these opinions, he relied upon the incident report, shearography of the companion tire, x-rays and photographs of the tire, discovery materials, and relevant reference materials.

Hankook first contends that Cottles is not qualified to offer an opinion on medium truck tires because his industry experience was limited to passenger and light truck tires. In his report, the expert acknowledged that medium truck tires included additional components and required substitution of materials. However, he stated that he had observed the manufacturing process for medium truck tires and that it was substantially the same as for passenger and light truck tires.

At his deposition, he testified that the size of the tire was relevant to a consideration of how it was used and whether external factors may have contributed to its failure. However, he asserted that size was not a relevant concern when determining whether a manufacturing defect caused the failure. After reviewing his qualifications, expert report, and deposition testimony, the Court concludes that Cottles is qualified to testify as an expert on medium truck tires. *See Great N. Ins. Co. v. BMW of N. Am. LLC*, 84 F. Supp. 3d 630, 639-40 (S.D. Ohio 2015) (rejecting contention that expert must have “specialized knowledge” and noting that “scope of expertise” goes to the weight of an opinion, not its admissibility). He has demonstrated a sound understanding of the components in the failed tire and may offer an opinion about the defects that he alleges existed at the time the product was manufactured. Next, Hankook questions the reliability underlying each of the expert’s manufacturing defect opinions.

a. Inadequate bonding

According to Cottles, the subject tire’s rubber skim material was “poorly bonded” between the skim belts. (D.E. 219-7 at PageID 6644.) He based this conclusion on the presence of liner pattern marks on the belt skim material. In his expert report, Cottles cited multiple publications that have connected liner impressions to tire failure. During his deposition, he testified that liner pattern marks indicated that the tire was not cured properly, and he said this affected the product’s ability to “perform for its foreseeable useful life.” (D.E. 205-2 at PageID 4309.) According to Cottles, this defect was not the cause of the initial tread separation, but once the tread began to separate, the weakened bond hastened the tire’s failure.

Defendant opposes the admission of the expert’s inadequate bonding theory on the basis that it is at odds with peer-reviewed studies and was not derived from a reliable methodology.

According to Hankook, many experts disagree that liner pattern marks indicate a defect that can lead to tire failure. Plaintiffs respond that Cottles cited to several publications in his expert report that support his theory that liner pattern marks are evidence of poor adhesion and may lead to failure of the tire. Further, while working for a tire manufacturer, his examination of failed tires led him to conclude that liner pattern marks were often present in tires that were not properly bonded. (D.E. 221-4 at PageID 7073-74.)

The *Kumho* Court was careful to stress that although the *Daubert* factors *may* help determine an expert's reliability, those factors are not a checklist and the inquiry is a flexible one. *Kumho*, 526 U.S. at 150. Defendant places undue emphasis on the lack of peer-reviewed publications supporting the expert's opinions. Tire failure analysis is highly dependent upon visual and tactile investigation, *id.* at 156, and Cottles's failure to cite to scientific testing that supports his theory is not fatal to its admission. *See First Tenn. Bank Nat. Ass'n*, 268 F.3d at 334-35 (rejecting idea that opinions derived from practical experience must be subjected to scholarly review or scientific evaluation in order to be reliable). He has explained his methodology in arriving at his inadequate bonding opinion and tied it to his knowledge of tire manufacturing gained through industry experience. Of course, Hankook is free to challenge Cottles's conclusions with countervailing opinions and evidence and may subject him to vigorous cross-examination, *see Daubert*, 509 U.S. at 596, but the Court concludes that the opinion is reliable, and Defendant's motion is DENIED in this respect.

b. Oxidative degradation

Cottles also offered his opinion that oxidative degradation of the tire's rubber contributed to the tread separation. In his report, the expert explained that belt skim rubber is enriched with

antioxidants in the manufacturing process. These antioxidants “chemically link to any oxygen attacking the rubber,” which “maintains the original properties of the rubber until the antioxidants are depleted.” (D.E. 219-7 at PageID 6646.) Once depleted, the rubber may show signs of cracking, polishing, and a loss in elasticity. Cottles opined that “[a] lack of adequate antioxidant remaining in the skim stock and/or in the original compounding of the skim stock rubber” resulted in accelerated oxidative degradation of the tire. (*Id.*)

In his deposition, Cottles stated that oxidation occurred “in the hottest areas [of the tire] due to stresses and strains that occur[ed] at the belt edges” (D.E. 205-2 at PageID 4320.) Thus, he said that the tire “wasn’t oxidized when it left the plant But all the weaknesses otherwise were, the liner imprints or the irregular belt issues, which contribute[d] to the stress and strain.” (*Id.*) According to Cottles, he was able to identify this defect based upon the presence of bonds that were “broken apart from each other from one layer of the belts to another layer of the belts.” (D.E. 205-2 at PageID 4323.) The expert said that oxidation caused rubber in the tire to become brittle, causing “wire strike through as a result of the wires breaking down from the bonds with the rubber itself.” (*Id.* at PageID 4324.) This breakdown led to “rigid channels” and “[c]racking at the base of the rubber.” (*Id.*) He further identified “polishing,” which showed that there was “enough separation on surfaces like that that ha[d] actually allowed them to move against each other.” (*Id.* at PageID 4325.) Cottles cited to an article which described the oxidation process, although he acknowledged that source did not include a “pictorial demonstration” of the defect. (*Id.*)

Defendant contends that Cottles’s oxidative degradation opinion is not properly supported, pointing out that he did not attempt to measure the elasticity in areas where he

allegedly found oxidation. Also, Hankook notes that Southwell opined that laboratory testing was required to measure oxidation, which was not performed in this case, and he concluded that oxidation did not play a significant role in the tread separation. In his deposition, Cottles admitted that he did not assess the elasticity of areas where he found oxidation. (D.E. 205-2 at PageID 4320.) He said that he did not attempt to “quantify” the oxidation in the subject tire because he “knew what [he] was looking at.” (*Id.* at PageID 4323.) He explained that in an unrelated case, he had consulted with a chemist who evaluated a tire and confirmed that there was oxidative breakdown. (*Id.*) By visually comparing the subject tire to the tire he examined in that case, Cottles said he could confirm the presence of oxidation without performing chemical analysis on the tire. (*Id.*) He also stated that he had regularly worked with and managed chemists on his design teams while working in the manufacturing industry.

When asked to identify testing that supports his theory that oxidative degradation can lead to a tread separation, he answered, “[I]t’s universally understood that if you oxidize the belt skim that then you’re going to fail the bonds in the belts.” (D.E. 205-2 at PageID 4321.) Cottles further testified that “bonds [were] broken apart from each other from one layer of the belts to another layer of the belts,” which was “the ultimate indication” of how oxidation “progressed along the belt edges” (*Id.* at PageID 4323.)

Cottles has adequately explained the basis for his oxidative degradation opinion and tied his conclusion to his relevant experience. He admitted that chemical analysis was not performed on the tire, and Hankook may exploit that fact. However, he also detailed his visual inspection of the tire and compared his findings to other instances where oxidative degradation was confirmed through more extensive testing. The Court concludes that any weaknesses in the

expert's opinion go to its weight, not its admissibility. The Defendant's motion is DENIED on this ground.

c. Belt defects

Finally, Cottles opined that the subject tire contained belt defects. According to the expert, the belts showed "evidence of irregular wire spacing, snaking, scalloping, gapped and dog-eared splices." (D.E. 219-7 at PageID 6647.) Cottles said that these irregularities "contribute[d] to heat generation and [an] increase in stresses and strains" (*Id.*) He testified in his deposition that the belt irregularities existed throughout the tire. Additionally, he stated that the irregular wire spacing was especially problematic near the edge of the tire's belt because as the tire rotates, its ability to manage its load was affected.

Hankook challenges the expert's conclusions that the tire showed belt irregularities, again contending that peer-reviewed literature does not support his theory. Defendant asserts that Cottles's inability to point to research that supports his theory creates an analytical gap between the evidence in the present case and his proffered opinion. Cone and Frazier admit that Cottles did not conduct independent testing to verify his theory regarding belt irregularities, but they point out that Defendant's own tire failure expert opined that this defect can lead to tread separation and that Cottles's opinion is based on "years of direct experience" rather than test results. (D.E. 219 at PageID 6186.)

As noted above, an expert can "draw a conclusion from a set of observations based on extensive and specialized experience," and "tire abuse may often be identified by qualified experts through visual or tactile inspection of the tire." *Kumho*, 526 U.S. at 156. Again, Hankook's challenge to this testimony goes more to the weight of the evidence than its

admissibility. Like his other defect theories, Cottles relied on his experience manufacturing and analyzing tires when formulating his opinion regarding belt irregularities. To the extent Defendant finds flaws in his methodology or authorities that question the expert's conclusions, "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof . . . are the traditional and appropriate means of attacking [allegedly] shaky but admissible evidence." *Daubert*, 509 U.S. at 596.

d. Alternative causes of tire's failure

Finally, Hankook contends that Cottles failed to rule out other causes of the tire's failure, undermining the reliability of his opinions. However, a section of the expert's report is dedicated to his consideration and ultimate rejection of other causes of the product's failure. First, Cottles opined that the tread separation was not caused by an impact, noting it was "generally accepted in the tire community" that impact damage would not cause a tread separation. (D.E. 219-7 at PageID 6648.) He stated that his observation of "rim grooving in the bead flange area" led him to conclude that under-inflation, over-inflation, and over-loading did not contribute to the tire's failure. (*Id.* at PageID 6649.) He further testified in his deposition that the tire had an adequate tread depth and "still had plenty of serviceable life in the treads." (D.E. 205-2 at PageID 4287.) According to the expert, inspection of a vehicle was not a normal practice in tire failure analysis. This evidence belies Defendant's contentions and demonstrates that Cottles considered a variety of other factors that may have led to the tire's failure.

3. Opinions Not in Expert Report and Request for *Daubert* Hearing

Defendant is also concerned that Plaintiffs will elicit opinions from Southwell and Cottles at trial that were not included in their expert reports. As Cone and Frazier point out, their experts

have not opined on design defects, breach of warranty, or failure to warn, and they do not intend to question either expert about these topics. If they should attempt to introduce such testimony at trial, Hankook may lodge the appropriate objections at that time.

Hankook also requested that the Court hold *Daubert* hearings to assess the experts' opinions. However, the Court does not find that necessary and the request is therefore DENIED.

III. CONCLUSION

Based upon the foregoing and the record as a whole, Defendant's motion to exclude expert testimony of Southwell, (D.E. 204), is GRANTED with respect to his opinion on the tire's skim coat gauge and DENIED in all other respects. Hankook's motion to exclude the testimony of Cottles, (D.E. 205), is DENIED in its entirety.

IT IS SO ORDERED this 19th day of January 2017.

s/ J. DANIEL BREEN
CHIEF UNITED STATES DISTRICT JUDGE